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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/773,318 | 02/09/2004 | Shinichi Sato | 248740US2 | 6645 |

22850 7590 11/04/2004

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| EXAMINER |
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POKER, JENNIFER A

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| ART UNIT | PAPER NUMBER |
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2832

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/773,318

Applicant(s)

SATO ET AL.

Examiner

Jennifer A. Poker

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 and 18-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/09/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/09/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 7-12 and 18-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 7, 2004.

2. Applicant's election with traverse of elected claims 1-6 and 13-17 in the reply filed on October 7, 2004 is acknowledged. The traversal is on the ground(s) that it would not be a serious burden to examine the entire application. This is not found persuasive because the two distinct inventions claimed are related as process of making and product made. In this case, the product as claimed can be made by another and materially different process. The inductive element as claimed does not require cutting a base material (along longitudinal and lateral directions) into respective chips. Therefore, these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification. Separate searches would be required.

The requirement is still deemed proper and is therefore made FINAL.

General Status

3. This is a first action on the merits of application filed on February 9, 2004. Claims 1-26 are pending. Claims 1-6 and 13-17 are being examined, while claims 7-12 and 18-26, drawn to a non-elected group are withdrawn from further consideration.

Drawings

4. Figures 1-3 and 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Applicant indicates on pages 1 and 2 of the specification that these illustrations indicate conventional inductors. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claim 16 is objected to because it recites the limitation "said insulating member" in line 16. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 1, 4, 5, 6, 13, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,531,945 to Ahn, et al, in view of U.S. Patent Number 6,791,444 to Masuda, et al.

Regarding claims 1, 13, and 15, Ahn, et al, discloses an inductor comprising:

(1) a plurality of U-shaped conductors embedded within a substrate; the substrate insulating between each U-shaped conductor;

(2) a connecting conductor (220), which bridges an opening edge of the U-shaped conductor to an opening edge of a next U-shaped conductor (figure 1); wherein a rectangular helical coil is formed.

Ahn, et al, discloses the claimed invention except for cutting conductors of a stacked layer member and an embedding material filled in the grooves formed by the cutting.

Masuda, et al, discloses an inductor wherein the inductor is a continuous inductor, which is cut into a predetermined lengths to obtain a plurality of cut inductor bodies, each of the cut inductor main bodies having a material interposed in a clearance between a wind on each end of the conducting wire and each of external surfaces and a clearance between adjoining winds of the conducting wire. The material may be a magnetic material, a dielectric material, or an electrically insulating material. (Column 2, lines 50-56; column 3, lines 3-4).

One skilled in the art, at the time the invention was made would have found it obvious to combine the teachings of Ahn, et al, with the teachings of Masuda, et al, and cut a continuously formed conductor in order to form predetermined sized individual windings.

Regarding claims 4 and 17, Ahn, et al, further discloses the conductive segments can be fabricated from a wide variety of suitable conductive materials, such as metals (column 7, lines 33-35). Ahn, et al, however, does not disclose the photolithography method, however, even though the

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claim is limited by and defined by the recited process, the determination of patentability of the product is based on the product itself, and does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 5, Ahn, et al, further illustrates that the connecting conductors (220) are formed on a flat surface of an opening edge of the U-shaped conductors and the substrate (figure 1).

Regarding claim 6, Masuda, et al, further discloses that the material coating/covering the inductor is one of a magnetic material, a dielectric material, or an insulating material (Column 2, lines 50-56; column 3, lines 3-4).

8. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,531,945 to Ahn, et al, in view of U.S. Patent Number 6,791,444 to Masuda, et al, as applied to claims 1 and 13 above, and further in view of U.S. Patent Number 6,614,093 to Ott, et al.

Ahn, et al, in view of Masuda, et al, disclose the claimed invention except for the formation of two sets of coils.

Ott, et al, discloses an inductor wherein conductors are connected by a connecting conductor by skipping one of the conductors so as to form two sets of coils. This formation is useful for inductively coupled networks. Furthermore, capacitive effects may arise through surrounding metallization (figure 12; column 7, lines 3-8).

One skilled in the art, at the time the invention was made would have found it obvious to combine the teachings of Ahn, et al, and Masuda, et al, with the teachings of Ott, et al, and form a

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second rectangular helical coil in order to increase capacitance and to further make the inductor useful for coupled networks.

9. Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,531,945 to Ahn, et al, in view of U.S. Patent Number 6,791,444 to Masuda, et al, as applied to claims 1 and 13 above, and further in view of U.S. Patent Number 6,535,093 to Murata, et al.

Ahn, et al, in view of Masuda, et al, discloses the claimed invention except for the embedding material being a resin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a suitable insulating material, such as a resin, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416; however a second reference is incorporated herein.

Murata, et al, discloses an inductor wherein a resin, such as an epoxy resin, is used as a coating to insulate the conductive material (column 3, lines 46-50).

One skilled in the art at the time the invention was made would have found it obvious to combine the teachings of Ahn, et al, and Masuda, et al, with the teachings of Murata, et al, and utilize a suitable insulating material, such a resin, in order to provide sufficient insulation about the conductive elements.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Poker whose telephone number is 571-272-1997. The examiner can normally be reached on 4:30-3:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jap
October 30, 2004


LINCOLN DONOVAN
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